



Ft. Collins, Colorado

LIMS Version: 6.867

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Tuesday, July 31, 2018

Sherry Lynch  
CH2M HILL Plateau Remediation Company  
825 Jadwin Avenue  
Richland, WA 99352

Re: ALS Workorder: 1807323  
Project Name: 100-KR-4 Long Term & Interim Action Monitoring - Water  
Project Number: F18-026

Dear Ms. Lynch:

Eight water samples were received from CH2M HILL Plateau Remediation Company, on 7/17/2018. The samples were scheduled for the following analyses:

InorganicsMetals

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

ALS Environmental  
Katie M. O'Brien  
Project Manager

We certify that this data package is in compliance with the SOW, both technically and for completeness, including a full description of, explanation of, and corrective actions for, any and all deviations, from either the analyses requested or the case narrative requested. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager (or designee) and the laboratory's client services representative as verified by their signatures on this report.

# ALS -- Fort Collins

## Sample Number(s) Cross-Reference Table

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**OrderNum:** 1807323

**Client Name:** CH2M HILL Plateau Remediation Company

**Client Project Name:** 100-KR-4 Long Term & Interim Action Monitoring - Water

**Client Project Number:** F18-026

**Client PO Number:** BOA 54854

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Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
B3J664	1807323-1		WATER	16-Jul-18	7:45
B3J653	1807323-2		WATER	16-Jul-18	10:16
B3J650	1807323-3		WATER	16-Jul-18	10:16
B3J649	1807323-4		WATER	16-Jul-18	10:16
B3J668	1807323-5		WATER	16-Jul-18	7:45
B3J654	1807323-6		WATER	16-Jul-18	10:16
B3J665	1807323-7		WATER	16-Jul-18	7:45
B3J669	1807323-8		WATER	16-Jul-18	7:45

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CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F18-026-021	PAGE 1 OF 1
<b>COLLECTOR</b> Daniel Klug CHPRC	<b>COMPANY CONTACT</b> LYNCH, SA	<b>TELEPHONE NO.</b> 373-5586	<b>PROJECT COORDINATOR</b> LYNCH, SA			<b>REQUIRED TAT</b> 15 Days	
<b>SAMPLING LOCATION</b> C9919, POST DEVELOPMENT	<b>PROJECT DESIGNATION</b> 100-KR-4 Long Term & Interim Action Monitoring - Water			<b>SAF NO.</b> F18-026	<b>ORIGINAL</b>		
<b>ICE CHEST NO.</b> 6WS595	<b>FIELD LOGBOOK NO.</b> HNF-N-645 12-36	<b>ACTUAL SAMPLE DEPTH</b> 92.40	<b>PURCHASE ORDER/CHARGE CODE</b> 304762	<b>METHOD OF SHIPMENT</b> FEDERAL EXPRESS			
<b>SHIPPED TO</b>	<b>OFFSITE PROPERTY NO.</b>	<b>BILL OF LADING/AIR BILL NO.</b> 773718546082					
<b>MATRIX*</b> A=Air DL=Drum L=Liquid DS=Drum S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> *Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	<b>PRESERVATION</b> Cool <=6C					
	<b>HOLDING TIME</b> 14 Days						
	<b>TYPE OF CONTAINER</b> G/P						
	<b>NO. OF CONTAINER(S)</b> 1						
	<b>VOLUME</b> 250ml						
<b>SPECIAL HANDLING AND/OR STORAGE</b> N/A	<b>SAMPLE ANALYSIS</b> SEE ITEM (1) IN SPECIAL INSTRUCTIONS						
<b>SAMPLE NO.</b> B3J650	<b>FILTERED</b> Yes	<b>MATRIX*</b> WATER	<b>SAMPLE DATE</b> JUL 16 2018	<b>SAMPLE TIME</b> 1016			
<b>CHAIN OF POSSESSION</b> RELINQUISHED BY/REMOVED FROM Daniel Klug CHPRC		<b>SIGN/ PRINT NAMES</b> RECEIVED BY/STORED IN Janelle Zucker CHPRC	<b>DATE/TIME</b> JUL 16 2018 1110	<b>DATE/TIME</b> JUL 16 2018 1110	<b>SPECIAL INSTRUCTIONS</b> TRVL-18-101 (1) 2320_ALKALINITY: COMMON (Add-on) {Bicarbonate, Carbonate alkalinity, Hydroxylion};		
<b>FINAL SAMPLE DISPOSITION</b> PRINTED ON 3/27/2018		<b>DISPOSAL METHOD</b>	<b>DISPOSED BY</b>	<b>DATE/TIME</b>	<b>TRVL NUM = TRVL-18-101</b>		
					<b>FSR ID = FSR59237</b>		
					<b>A-6003-618 (REV 3)</b>		

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CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F18-026-036	PAGE 1 OF 1
COLLECTOR	Daniel Klug CHPRC	COMPANY CONTACT	LYNCH, SA	TELEPHONE NO.	373-5586
SAMPLING LOCATION	C9919, POST DEVELOPMENT FTB	PROJECT DESIGNATION	100-KR-4 Long Term & Interim Action Monitoring - Water	PROJECT COORDINATOR	LYNCH, SA
ICE CHEST NO.	6ws-595	FIELD LOGBOOK NO.	HNF-N-645 12-16	SAF NO.	F18-026
SHIPPED TO		OFFSITE PROPERTY NO.	9695	PURCHASE ORDER/CHARGE CODE	304762
MATRIX*	A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS	*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	METHOD OF SHIPMENT	FEDERAL EXPRESS
PRESERVATION	HNO3 to pH <2	HOLDING TIME	6 Months	BILL OF LADING/AIR BILL NO.	1707323
TYPE OF CONTAINER	G/P	NO. OF CONTAINER(S)	1		
VOLUME	500mL	SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS		
SPECIAL HANDLING AND/OR STORAGE	N/A	SAMPLE DATE	JUL 16 2018		
SAMPLE NO.	B31668	FILTERED	N/A		
MATRIX*	WATER	SAMPLE TIME	0745		
CHAIN OF POSSESSION	RELINQUISHED BY/REMOVED FROM	DATE/TIME	JUL 16 2018	SPECIAL INSTRUCTIONS	TRVL-18-101 (1) 6010_METALS_ICP: COMMON {Calcium, Magnesium, Potassium, Sodium}; 6020_METALS_ICPMS: COMMON {Antimony, Chromium}; 6020_METALS_ICPMS: COMMON (Add-on) {Nickel, Vanadium, Zinc};
D.K. Klug CHPRC	JUL 16 2018	JUL 16 2018	JUL 16 2018 1110		
Janell Zurbrugg CHPRC	JUL 16 2018	JUL 16 2018	JUL 16 2018 1110		
FedEx	FedEx	FedEx	FedEx		
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DATE/TIME	DATE/TIME	DISPOSED BY	DATE/TIME
PRINTED ON 3/27/2018	FSR ID = FSR59239	TRVL NUM = TRVL-18-101			A-6003-618 (REV 3)



CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F18-026-025	PAGE 1 OF 1
COLLECTOR	Daniel Klug CHPRC	COMPANY CONTACT	LYNCH, SA	TELEPHONE NO.	373-5586
SAMPLING LOCATION	C9919, POST DEVELOPMENT	PROJECT DESIGNATION	100-KR-4 Long Term & Interim Action Monitoring - Water	PROJECT COORDINATOR	LYNCH, SA
ICE CHEST NO.	6WS-595	FIELD LOGBOOK NO.	HNF-N-645 12.36	SAF NO.	F18-026
SHIPPED TO		ACTUAL SAMPLE DEPTH	92.40 FT	PURCHASE ORDER/CHARGE CODE	304762
		OFFSITE PROPERTY NO.	01695	BILL OF LADING/AIR BILL NO.	7727 1854 6082
MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS	PRESERVATION	Cool <=6C	METHOD OF SHIPMENT	FEDERAL EXPRESS
A=Air	*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	HOLDING TIME	14 Days		
DL=Drum		TYPE OF CONTAINER	G/P		
Liquids		NO. OF CONTAINER(S)	1		
DS=Drum		VOLUME	250mL		
Solids		SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS		
L=Liquid					
O=Oil					
S=Soil					
SE=Sediment					
T=Tissue					
V=Vegetation					
W=Water					
WI=Wipe					
X=Other					
SPECIAL HANDLING AND/OR STORAGE	N/A				
SAMPLE NO.	31654	DATE	JUL 16 2018	TIME	1614
FILTERED	No				
MATRIX*	WATER				
RELINQUISHED BY/REMOVED FROM	D. Klug CHPRC	DATE/TIME	JUL 16 2018	TIME	1400
RECEIVED BY/STORED IN	Janelle Zunker CHPRC	DATE/TIME	JUL 16 2018	TIME	1110
CHAIN OF POSSESSION	Janelle Zunker CHPRC	DATE/TIME	JUL 16 2018	TIME	1400
RELINQUISHED BY/REMOVED FROM	Janelle Zunker CHPRC	DATE/TIME	JUL 16 2018	TIME	1400
RECEIVED BY/STORED IN	Janelle Zunker CHPRC	DATE/TIME	JUL 16 2018	TIME	1400
SPECIAL INSTRUCTIONS	TRVL-18-101 (1) 2320_ALKALINITY: COMMON (Add-on) {Bicarbonate, Carbonate alkalinity, Hydroxylion};				
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME		
PRINTED ON	3/27/2018	FSR ID = FSR59237	TRVL NUM = TRVL-18-101		A-6003-618 (REV 3)



CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F18-026-033		PAGE 1 OF 1	
COLLECTOR	Daniel Klug CHPRC	COMPANY CONTACT	LYNCH, SA	TELEPHONE NO.	373-5586	PROJECT COORDINATOR	LYNCH, SA
SAMPLING LOCATION	C9919, POST DEVELOPMENT FTB	PROJECT DESIGNATION	100-KR-4 Long Term & Interim Action Monitoring - Water	FIELD LOGBOOK NO.	HNF-N-645 12-36	ACTUAL SAMPLE DEPTH	(N/A)
ICE CHEST NO.	6WS-595	FIELD LOGBOOK NO.	HNF-N-645 12-36	OFFSITE PROPERTY NO.			
SHIPPED TO		PURCHASE ORDER/CHARGE CODE	304762	METHOD OF SHIPMENT	FEDERAL EXPRESS	REQUIRED TAT	15 Days
MATRIX*	A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	PROJECT COORDINATOR	LYNCH, SA	TELEPHONE NO.	373-5586	PROJECT COORDINATOR	LYNCH, SA
POSSIBLE SAMPLE HAZARDS/ REMARKS	*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	PROJECT COORDINATOR	LYNCH, SA	TELEPHONE NO.	373-5586	PROJECT COORDINATOR	LYNCH, SA
SPECIAL HANDLING AND/OR STORAGE	N/A	PROJECT COORDINATOR	LYNCH, SA	TELEPHONE NO.	373-5586	PROJECT COORDINATOR	LYNCH, SA
SAMPLE NO.	B3J665	SAMPLE DATE	JUL 16 2018	SAMPLE TIME	0745	SAMPLE TIME	0745
RELINQUISHED BY/REMOVED FROM	D. Klug CHPRC	RELINQUISHED BY/REMOVED FROM	Janelle Zunker CHPRC	DATE/TIME	JUL 16 2018 1110	DATE/TIME	JUL 16 2018 1110
DISPOSAL METHOD	3/27/2018	DISPOSAL METHOD	3/27/2018	DATE/TIME	3/27/2018	DATE/TIME	3/27/2018
FINAL SAMPLE DISPOSITION	3/27/2018	FINAL SAMPLE DISPOSITION	3/27/2018	DATE/TIME	3/27/2018	DATE/TIME	3/27/2018
PRINTED ON	3/27/2018	PRINTED ON	3/27/2018	DATE/TIME	3/27/2018	DATE/TIME	3/27/2018
FSR ID = FSR59239		FSR ID = FSR59239		DATE/TIME		DATE/TIME	
TRVL NUM = TRVL-18-101		TRVL NUM = TRVL-18-101		DATE/TIME		DATE/TIME	
A-6003-618 (REV 3)		A-6003-618 (REV 3)		DATE/TIME		DATE/TIME	

## CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

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<b>COLLECTOR</b> Daniel Klug CHPRC	<b>COMPANY CONTACT</b> LYNCH, SA	<b>TELEPHONE NO.</b> 373-5586	<b>PROJECT COORDINATOR</b> LYNCH, SA	<b>REQUIRED TAT</b> 15 Days
<b>SAMPLING LOCATION</b> C9919, POST DEVELOPMENT FTB	<b>PROJECT DESIGNATION</b> 100-KR-4 Long Term & Interim Action Monitoring - Water	<b>SAF NO.</b> F18-026	<b>PURCHASE ORDER/CHARGE CODE</b> 304762	<b>ORIGINAL</b>
<b>ICE CHEST NO.</b> 6WS-595	<b>FIELD LOGBOOK NO.</b> HNF-N-64512-36	<b>ACTUAL SAMPLE DEPTH</b> (N/A)	<b>METHOD OF SHIPMENT</b> FEDERAL EXPRESS	
<b>SHIPPED TO</b>	<b>OFFSITE PROPERTY NO.</b> 9695	<b>BILL OF LADING/AIR BILL NO.</b> 772718546082		

<b>MATRIX*</b> A=Air DL=Drum L=Liquid DS=Drum S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> *Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	<b>PRESERVATION</b> Cool <=6C
<b>HOLDING TIME</b> 14 Days	<b>TYPE OF CONTAINER</b> G/P	
<b>NO. OF CONTAINER(S)</b> 1	<b>VOLUME</b> 250mL	
<b>SPECIAL HANDLING AND/OR STORAGE</b> N/A	<b>SAMPLE ANALYSIS</b> SEE ITEM (1) IN SPECIAL INSTRUCTIONS	

SAMPLE NO.	FILTERED	MATRIX*	SAMPLE DATE	SAMPLE TIME
B31669	N/A	WATER	JUL 16 2018	6745

<b>CHAIN OF POSSESSION</b> RELINQUISHED BY/REMOVED FROM Daniel Klug CHPRC	<b>SIGN/ PRINT NAMES</b> RECEIVED BY/STORED IN Janelle Zunker CHPRC	<b>DATE/TIME</b> JUL 16 2018 1110	<b>SPECIAL INSTRUCTIONS</b> TRVL-18-101 (1) 2320_ALKALINITY: COMMON (Add-on) {Bicarbonate, Carbonate alkalinity, Hydroxylion};
<b>DATE/TIME</b> JUL 16 2018 1110	<b>DATE/TIME</b> JUL 16 2018 1110	<b>DATE/TIME</b> JUL 16 2018 1110	<b>DATE/TIME</b> JUL 16 2018 1110

<b>FINAL SAMPLE DISPOSITION</b>	<b>DISPOSAL METHOD</b>	<b>DISPOSED BY</b>	<b>DATE/TIME</b>
<b>PRINTED ON</b> 3/27/2018	<b>FSR ID =</b> FSR59239	<b>TRVL NUM =</b> TRVL-18-101	<b>A-6003-618 (REV 3)</b>



**ALS Environmental - Fort Collins**  
**CONDITION OF SAMPLE UPON RECEIPT FORM**

Client: CHPRCWorkorder No: 1807323Project Manager: KMOInitials: FEDate: 7-17-18

1. Are airbills / shipping documents present and/or removable?	DROP OFF	<u>YES</u>	NO
2. Are custody seals on <b>shipping</b> containers intact?	NONE	<u>YES</u>	NO
3. Are custody seals on <b>sample</b> containers intact?	NONE	<u>YES</u>	NO
4. Is there a COC (chain-of-custody) present?		<u>YES</u>	NO
5. Is the COC in agreement with samples received? (IDs, dates, times, # of samples, # of containers, matrix, requested analyses, etc.)		<u>YES</u>	NO
6. Are short-hold samples present?		YES	<u>NO</u>
7. Are all samples within holding times for the requested analyses?		<u>YES</u>	NO
8. Were all sample containers received intact? (not broken or leaking)		<u>YES</u>	NO
9. Is there sufficient sample for the requested analyses?		<u>YES</u>	NO
10. Are all samples in the proper containers for the requested analyses?		<u>YES</u>	NO
11. Are all aqueous samples preserved correctly, if required? (excluding volatiles)	N/A	<u>YES</u>	NO
12. Are all aqueous non-preserved samples pH 4-9?	N/A	<u>YES</u>	NO
13. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) free of bubbles > 6 mm (1/4 inch) diameter? (i.e. size of green pea)	<u>N/A</u>	YES	NO
14. Were the samples shipped on ice?		<u>YES</u>	NO
15. Were cooler temperatures measured at 0.1-6.0°C?	IR gun used*: #1 #3 <u>#4</u>	RAD ONLY <u>YES</u>	NO
Cooler #: <u>1</u>			
Temperature (°C): <u>2.8</u>			
No. of custody seals on cooler: <u>2</u>			
DOT Survey Acceptance Information	External µR/hr reading: <u>13</u>		
	Background µR/hr reading: <u>12</u>		
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? YES / NO / NA (If no, see Form 008.)			

**Additional Information:** Please provide details here for any NO responses to gray-shaded boxes above, or any other issues noted:

If applicable, was the client contacted? YES / NO / NA Contact: 1cDate/Time: 7/18/18Project Manager Signature / Date: 7/18/18

1807323

ORIGIN: DPSCA (509) 528-9426 LESLY WALL 6287 LATIHA ST. RICHLAND, WA 99354 UNITED STATES US	SHIP DATE: 16 JUL 18 ACTWGT: 45.00 LB CAD: 10706603/INET3980 BILL THIRD PARTY
TO JULIE ELLINGSON ALS GLOBAL 225 COMMERCE DRIVE FORT COLLINS CO 80524 (970) 490-1511 INV: REF: PTR#693000LEF#GWS595 PO: DEPT:	13-2 2.8 3021265321DCA5
TRK# 7727 1854 6082 0201	TUE - 17 JUL 10:30A PRIORITY OVERNIGHT DSR 80524 CO-US DEN
XH FTCA 	  1181118012801un

**After printing this label:**

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## Inorganics Case Narrative

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### **CH2M HILL Plateau Remediation Company** **100-KR-4 Long Term & Interim Action Monitoring - Water --** **F18-026**

Work Order Number: 1807323

1. The samples were prepared for analysis based on Standard Methods for the Examination of Water and Wastewater, 20<sup>th</sup> Edition 1998 procedures.
2. The samples were analyzed following Standard Method procedures for the current revision of the following SOP and method:

<u>Analyte</u>	<u>Method</u>	<u>SOP #</u>
Alkalinity	SM2320B	1106
Bicarbonate	SM2320B	1106
Carbonate	SM2320B	1106
Hydroxide	SM2320B	1106

3. All standards and solutions were used within their recommended shelf life.
4. The samples were prepared and analyzed within the established hold time for this analysis.

All in house quality control procedures were followed, as described below.

5. General quality control procedures.
  - n A preparation (method) blank and laboratory control sample (LCS) were prepared and analyzed with the samples in this preparation batch.
  - n The method blank associated with this batch was below the reporting limit for the requested analytes.
  - n All laboratory control sample criteria were met.
6. Matrix specific quality control procedures.

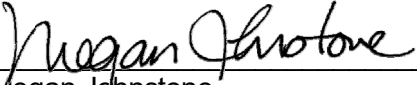


Sample 1807323-3 was designated as the quality control sample for this analysis.

Similarity of matrix and therefore relevance of the QC results should not be automatically inferred for any sample other than the native sample selected for QC.

- n A sample duplicate was prepared and analyzed with this batch. All guidance criteria for precision were met.
- 7. Reduced aliquots were taken of samples 1807323-3 and -6 for the alkalinity, bicarbonate, carbonate and hydroxide analysis. Reporting limits were elevated accordingly.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

  
\_\_\_\_\_  
Megan Johnstone  
Inorganics Primary Data Reviewer

7/30/18  
Date

  
\_\_\_\_\_  
Inorganics Final Data Reviewer

7/31/18  
Date



### **Inorganic Data Reporting Qualifiers**

The following qualifiers are used as needed by the laboratory when reporting results of inorganic analyses.

- Concentration qualifier -- A "B" is entered if the reported value was obtained from a reading that was less than the Reporting Limit but greater than or equal to ALS's Method Detection Limit. If the analyte was analyzed for but not detected a "U" is entered.
- QC qualifier -- Specified entries and their meanings are as follows:
  - E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.
  - M - Duplicate injection precision was not met.
  - N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.
  - Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.
  - \* - Duplicate analysis (relative percent difference) not within control limits.
  - S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.
  - C - The analyte was detected in both the sample and the associated QC blank, and the sample concentration was  $\leq 5X$  the blank concentration.
  - D - Analyte was reported at a secondary dilution factor, typically  $DF > 1$  (i.e., the primary preparation required dilution to either bring the analyte within the calibration range or to minimize interference). Required for organics/wetchem if the sample was diluted.



**BICARBONATE AS CaCO<sub>3</sub>****Method SM2320B****Sample Results**

**Lab Name:** ALS -- Fort Collins  
**Client Name:** CH2M HILL Plateau Remediation Company  
**Client Project ID:** 100-KR-4 Long Term & Interim Action Monitoring - Water F18-026  
**Work Order Number:** 1807323 **Final Volume:** 100 ml  
**Reporting Basis:** As Received **Matrix:** WATER  
**Prep Method:** NONE **Result Units:** MG/L  
**Analyst:** Andrew E. Jones

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit/ LOQ/LOD	Flag	Sample Aliquot
B3J650	1807323-3	07/16/2018	07/25/2018	07/25/2018	N/A	1	110	20		25 ml
B3J665	1807323-7	07/16/2018	07/25/2018	07/25/2018	N/A	1	5	5	U	100 ml

**Comments:**

1. ND or U = Not Detected at or above the client requested detection limit.

**Data Package ID:** AK1807323-1

**CARBONATE AS CaCO<sub>3</sub>****Method SM2320B****Sample Results**

**Lab Name:** ALS -- Fort Collins  
**Client Name:** CH2M HILL Plateau Remediation Company  
**Client Project ID:** 100-KR-4 Long Term & Interim Action Monitoring - Water F18-026  
**Work Order Number:** 1807323 **Final Volume:** 100 ml  
**Reporting Basis:** As Received **Matrix:** WATER  
**Prep Method:** NONE **Result Units:** MG/L  
**Analyst:** Andrew E. Jones

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit/ LOQ/LOD	Flag	Sample Aliquot
B3J650	1807323-3	07/16/2018	07/25/2018	07/25/2018	N/A	1	20	20	U	25 ml
B3J665	1807323-7	07/16/2018	07/25/2018	07/25/2018	N/A	1	5	5	U	100 ml

**Comments:**

1. ND or U = Not Detected at or above the client requested detection limit.

**Data Package ID:** AK1807323-1**Date Printed:** Monday, July 30, 2018**ALS -- Fort Collins**

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**HYDROXIDE AS CaCO<sub>3</sub>****Method SM2320BH****Sample Results**

**Lab Name:** ALS -- Fort Collins  
**Client Name:** CH2M HILL Plateau Remediation Company  
**Client Project ID:** 100-KR-4 Long Term & Interim Action Monitoring - Water F18-026  
**Work Order Number:** 1807323 **Final Volume:** 100 ml  
**Reporting Basis:** As Received **Matrix:** WATER  
**Prep Method:** NONE **Result Units:** MG/L  
**Analyst:** Andrew E. Jones

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit/LOQ/LOD	Flag	Sample Aliquot
B3J650	1807323-3	07/16/2018	07/25/2018	07/25/2018	N/A	1	20	20	U	25 ml
B3J665	1807323-7	07/16/2018	07/25/2018	07/25/2018	N/A	1	5	5	U	100 ml

**Comments:**

1. ND or U = Not Detected at or above the client requested detection limit.

**Data Package ID:** AK1807323-1

**TOTAL ALKALINITY AS CaCO<sub>3</sub>****Method SM2320B****Sample Results**

**Lab Name:** ALS -- Fort Collins  
**Client Name:** CH2M HILL Plateau Remediation Company  
**Client Project ID:** 100-KR-4 Long Term & Interim Action Monitoring - Water F18-026  
**Work Order Number:** 1807323 **Final Volume:** 100 ml  
**Reporting Basis:** As Received **Matrix:** WATER  
**Prep Method:** NONE **Result Units:** MG/L  
**Analyst:** Andrew E. Jones

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit/ LOQ/LOD	Flag	Sample Aliquot
B3J650	1807323-3	07/16/2018	07/25/2018	07/25/2018	N/A	1	110	20		25 ml
B3J665	1807323-7	07/16/2018	07/25/2018	07/25/2018	N/A	1	5	5	U	100 ml

**Comments:**

1. ND or U = Not Detected at or above the client requested detection limit.

**Data Package ID:** AK1807323-1**Date Printed:** Monday, July 30, 2018**ALS -- Fort Collins**

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**BICARBONATE AS CaCO<sub>3</sub>****Method SM2320B****Sample Results**

**Lab Name:** ALS -- Fort Collins  
**Client Name:** CH2M HILL Plateau Remediation Company  
**Client Project ID:** 100-KR-4 Long Term & Interim Action Monitoring - Water F18-026  
**Work Order Number:** 1807323 **Final Volume:** 100 ml  
**Reporting Basis:** As Received **Matrix:** WATER  
**Prep Method:** NONE **Result Units:** MG/L  
**Analyst:** Andrew E. Jones

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit/ LOQ/LOD	Flag	Sample Aliquot
B3J654	1807323-6	07/16/2018	07/25/2018	07/25/2018	N/A	1	110	20		25 ml
B3J669	1807323-8	07/16/2018	07/25/2018	07/25/2018	N/A	1	5	5	U	100 ml

**Comments:**

1. ND or U = Not Detected at or above the client requested detection limit.

**Data Package ID:** AK1807323-1

**CARBONATE AS CaCO<sub>3</sub>****Method SM2320B****Sample Results**

**Lab Name:** ALS -- Fort Collins  
**Client Name:** CH2M HILL Plateau Remediation Company  
**Client Project ID:** 100-KR-4 Long Term & Interim Action Monitoring - Water F18-026  
**Work Order Number:** 1807323 **Final Volume:** 100 ml  
**Reporting Basis:** As Received **Matrix:** WATER  
**Prep Method:** NONE **Result Units:** MG/L  
**Analyst:** Andrew E. Jones

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit/ LOQ/LOD	Flag	Sample Aliquot
B3J654	1807323-6	07/16/2018	07/25/2018	07/25/2018	N/A	1	20	20	U	25 ml
B3J669	1807323-8	07/16/2018	07/25/2018	07/25/2018	N/A	1	5	5	U	100 ml

**Comments:**

1. ND or U = Not Detected at or above the client requested detection limit.

**Data Package ID:** AK1807323-1**Date Printed:** Monday, July 30, 2018**ALS -- Fort Collins**

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**HYDROXIDE AS CaCO<sub>3</sub>****Method SM2320BH****Sample Results**

**Lab Name:** ALS -- Fort Collins  
**Client Name:** CH2M HILL Plateau Remediation Company  
**Client Project ID:** 100-KR-4 Long Term & Interim Action Monitoring - Water F18-026  
**Work Order Number:** 1807323 **Final Volume:** 100 ml  
**Reporting Basis:** As Received **Matrix:** WATER  
**Prep Method:** NONE **Result Units:** MG/L  
**Analyst:** Andrew E. Jones

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit/ LOQ/LOD	Flag	Sample Aliquot
B3J654	1807323-6	07/16/2018	07/25/2018	07/25/2018	N/A	1	20	20	U	25 ml
B3J669	1807323-8	07/16/2018	07/25/2018	07/25/2018	N/A	1	5	5	U	100 ml

**Comments:**

1. ND or U = Not Detected at or above the client requested detection limit.

**Data Package ID:** AK1807323-1**Date Printed:** Monday, July 30, 2018**ALS -- Fort Collins**

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**TOTAL ALKALINITY AS CaCO<sub>3</sub>****Method SM2320B****Sample Results**

**Lab Name:** ALS -- Fort Collins  
**Client Name:** CH2M HILL Plateau Remediation Company  
**Client Project ID:** 100-KR-4 Long Term & Interim Action Monitoring - Water F18-026  
**Work Order Number:** 1807323 **Final Volume:** 100 ml  
**Reporting Basis:** As Received **Matrix:** WATER  
**Prep Method:** NONE **Result Units:** MG/L  
**Analyst:** Andrew E. Jones

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit/ LOQ/LOD	Flag	Sample Aliquot
B3J654	1807323-6	07/16/2018	07/25/2018	07/25/2018	N/A	1	110	20		25 ml
B3J669	1807323-8	07/16/2018	07/25/2018	07/25/2018	N/A	1	5	5	U	100 ml

**Comments:**

1. ND or U = Not Detected at or above the client requested detection limit.

**Data Package ID:** AK1807323-1

**BICARBONATE AS CaCO<sub>3</sub>****Method SM2320B****Method Blank****Lab Name:** ALS -- Fort Collins**Work Order Number:** 1807323**Client Name:** CH2M HILL Plateau Remediation Company**ClientProject ID:** 100-KR-4 Long Term & Interim Action Monitoring - Water F18-02**Lab ID:** AK180725-2MB**Sample Matrix:** WATER**% Moisture:** N/A**Prep Batch:** AK180725-2**QCBatchID:** AK180725-2-1**Run ID:** AK180725-1A1**Cleanup:** NONE**Basis:** N/A**Sample Aliquot:** 100 ml**Final Volume:** 100 ml**Result Units:** MG/L

Lab ID	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit/ LOQ	Flag
AK180725-2MB	7/25/2018	07/25/2018	N/A	1	5	5	U

**Comments:**

1. ND or U = Not Detected at or above the client requested detection limit.

**Data Package ID:** AK1807323-1**Date Printed:** Monday, July 30, 2018**ALS -- Fort Collins**

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**CARBONATE AS CaCO<sub>3</sub>****Method SM2320B****Method Blank****Lab Name:** ALS -- Fort Collins**Work Order Number:** 1807323**Client Name:** CH2M HILL Plateau Remediation Company**ClientProject ID:** 100-KR-4 Long Term & Interim Action Monitoring - Water F18-02**Lab ID:** AK180725-2MB**Sample Matrix:** WATER**% Moisture:** N/A**Prep Batch:** AK180725-2**QCBatchID:** AK180725-2-1**Run ID:** AK180725-1A1**Cleanup:** NONE**Basis:** N/A**Sample Aliquot:** 100 ml**Final Volume:** 100 ml**Result Units:** MG/L

Lab ID	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit/ LOQ	Flag
AK180725-2MB	7/25/2018	07/25/2018	N/A	1	5	5	U

**Comments:**

1. ND or U = Not Detected at or above the client requested detection limit.

**Data Package ID:** AK1807323-1**Date Printed:** Monday, July 30, 2018**ALS -- Fort Collins**

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**HYDROXIDE AS CaCO<sub>3</sub>****Method SM2320BH****Method Blank****Lab Name:** ALS -- Fort Collins**Work Order Number:** 1807323**Client Name:** CH2M HILL Plateau Remediation Company**ClientProject ID:** 100-KR-4 Long Term & Interim Action Monitoring - Water F18-02**Lab ID:** AK180725-2MB**Sample Matrix:** WATER**% Moisture:** N/A**Prep Batch:** AK180725-2**QCBatchID:** AK180725-2-4**Run ID:** AK180725-1A1**Cleanup:** NONE**Basis:** N/A**Sample Aliquot:** 100 ml**Final Volume:** 100 ml**Result Units:** MG/L

Lab ID	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit/ LOQ	Flag
AK180725-2MB	7/25/2018	07/25/2018	N/A	1	5	5	U

**Comments:**

1. ND or U = Not Detected at or above the client requested detection limit.

**Data Package ID:** AK1807323-1**Date Printed:** Monday, July 30, 2018**ALS -- Fort Collins**

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**TOTAL ALKALINITY AS CaCO<sub>3</sub>****Method SM2320B****Method Blank****Lab Name:** ALS -- Fort Collins**Work Order Number:** 1807323**Client Name:** CH2M HILL Plateau Remediation Company**ClientProject ID:** 100-KR-4 Long Term & Interim Action Monitoring - Water F18-02**Lab ID:** AK180725-2MB**Sample Matrix:** WATER**% Moisture:** N/A**Prep Batch:** AK180725-2**QCBatchID:** AK180725-2-1**Run ID:** AK180725-1A1**Cleanup:** NONE**Basis:** N/A**Sample Aliquot:** 100 ml**Final Volume:** 100 ml**Result Units:** MG/L

Lab ID	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit/ LOQ	Flag
AK180725-2MB	7/25/2018	07/25/2018	N/A	1	5	5	U

**Comments:**

1. ND or U = Not Detected at or above the client requested detection limit.

**Data Package ID:** AK1807323-1**Date Printed:** Monday, July 30, 2018**ALS -- Fort Collins**

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**TOTAL ALKALINITY AS CaCO<sub>3</sub>****Method SM2320B****Laboratory Control Sample****Lab Name:** ALS -- Fort Collins**Work Order Number:** 1807323**Client Name:** CH2M HILL Plateau Remediation Company**ClientProject ID:** 100-KR-4 Long Term & Interim Action Monitoring - Water F18-02**Lab ID:** AK180725-2LCS**Sample Matrix:** WATER**% Moisture:** N/A**Date Collected:** N/A**Date Extracted:** 07/25/2018**Date Analyzed:** 07/25/2018**Prep Batch:** AK180725-2**QCBatchID:** AK180725-2-1**Run ID:** AK180725-1A1**Cleanup:** NONE**Basis:** N/A**Sample Aliquot:** 100 ml**Final Volume:** 100 ml**Result Units:** MG/L

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
	TOTAL ALKALINITY AS CaCO <sub>3</sub>	100	101	5		101	85 - 115

**Data Package ID:** AK1807323-1**Date Printed:** Monday, July 30, 2018**ALS -- Fort Collins**

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**BICARBONATE AS CaCO3****Method SM2320B****Duplicate Sample Results****Lab Name:** ALS -- Fort Collins**Work Order Number:** 1807323**Client Name:** CH2M HILL Plateau Remediation Company**ClientProject ID:** 100-KR-4 Long Term & Interim Action Monitoring - Water F18-02**Reporting Basis:** As Received**Sample Aliquot:** 25 ml**Final Volume:** 100ml**Matrix:** WATER**Result Units:** MG/L

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Dup Qual	Sample Result	Samp Qual	Reporting Limit	RPD	RPD Limit
B3J650	1807323-3D	07/25/2018	07/25/2018	1	111		110		20	3	15

**Comments:**

1. ND or U = Not Detected at or above the client requested detection limit.

**Data Package ID:** AK1807323-1**Date Printed:** Monday, July 30, 2018**ALS -- Fort Collins**

LIMS Version: 6.867

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**CARBONATE AS CaCO<sub>3</sub>****Method SM2320B****Duplicate Sample Results****Lab Name:** ALS -- Fort Collins**Work Order Number:** 1807323**Client Name:** CH2M HILL Plateau Remediation Company**ClientProject ID:** 100-KR-4 Long Term & Interim Action Monitoring - Water F18-02**Reporting Basis:** As Received**Sample Aliquot:** 25 ml**Final Volume:** 100ml**Matrix:** WATER**Result Units:** MG/L

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Dup Qual	Sample Result	Samp Qual	Reporting Limit	RPD	RPD Limit
B3J650	1807323-3D	07/25/2018	07/25/2018	1	20	U	20	U	20		15

**Comments:**

1. ND or U = Not Detected at or above the client requested detection limit.

**Data Package ID:** AK1807323-1**Date Printed:** Monday, July 30, 2018**ALS -- Fort Collins**

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**HYDROXIDE AS CaCO<sub>3</sub>****Method SM2320BH****Duplicate Sample Results****Lab Name:** ALS -- Fort Collins**Work Order Number:** 1807323**Client Name:** CH2M HILL Plateau Remediation Company**ClientProject ID:** 100-KR-4 Long Term & Interim Action Monitoring - Water F18-02**Reporting Basis:** As Received**Sample Aliquot:** 25 ml**Final Volume:** 100ml**Matrix:** WATER**Result Units:** MG/L

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Dup Qual	Sample Result	Samp Qual	Reporting Limit	RPD	RPD Limit
B3J650	1807323-3D	07/25/2018	07/25/2018	1	20	U	20	U	20		15

**Comments:**

1. ND or U = Not Detected at or above the client requested detection limit.

**Data Package ID:** AK1807323-1**Date Printed:** Monday, July 30, 2018**ALS -- Fort Collins**

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**TOTAL ALKALINITY AS CaCO<sub>3</sub>****Method SM2320B****Duplicate Sample Results****Lab Name:** ALS -- Fort Collins**Work Order Number:** 1807323**Client Name:** CH2M HILL Plateau Remediation Company**ClientProject ID:** 100-KR-4 Long Term & Interim Action Monitoring - Water F18-02**Reporting Basis:** As Received**Sample Aliquot:** 25 ml**Final Volume:** 100ml**Matrix:** WATER**Result Units** MG/L

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Dup Qual	Sample Result	Samp Qual	Reporting Limit	RPD	RPD Limit
B3J650	1807323-3D	07/25/2018	07/25/2018	1	111		110		20	3	15

**Comments:**

1. ND or U = Not Detected at or above the client requested detection limit.

**Data Package ID:** AK1807323-1**Date Printed:** Monday, July 30, 2018**ALS -- Fort Collins**

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**Prep Batch ID: AK180725-2**

Start Date: 07/25/18

End Date: 07/25/18

Concentration Method: NONE

Batch Created By: aej

Start Time: 9:30

End Time: 12:45

Extract Method: NONE

Date Created: 07/25/18

Prep Analyst: Andrew E. Jones

Initial Volume Units: ml

Time Created: 13:03

Comments:

Final Volume Units: ml

Validated By: hma

Date Validated: 07/26/18

Time Validated: 9:24

QC Batch ID: AK180725-2-1

Lab ID	QC Type	Field ID	Matrix	Date Collected	Initial Wt/Vol	Final Wt/Vol	Cleanup Method	Cleanup DF	Order Number
AK180725-2	MB	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1807323
AK180725-2	LCS	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1807323
1807323-3	DUP	B3J650	WATER	7/16/2018	25	100	NONE	1	1807323
1807361-2	DUP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1807361
1807420-4	DUP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1807420
1807323-3	SMP	B3J650	WATER	7/16/2018	25	100	NONE	1	1807323
1807323-6	SMP	B3J654	WATER	7/16/2018	25	100	NONE	1	1807323
1807323-7	SMP	B3J665	WATER	7/16/2018	100	100	NONE	1	1807323
1807323-8	SMP	B3J669	WATER	7/16/2018	100	100	NONE	1	1807323
1807348-1	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1807348
1807348-3	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1807348
1807361-2	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1807361
1807386-16	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1807386
1807386-2	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1807386
1807420-4	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1807420
1807424-11	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1807424
1807424-2	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1807424
1807424-28	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1807424
1807424-36	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1807424
1807436-1	SMP	XXXXXX	WATER	XXXXXX	25	100	NONE	1	1807436

QC Types

CAR	Carrier reference sample	DUP	Laboratory Duplicate
LCS	Laboratory Control Sample	LCSD	Laboratory Control Sample Duplicat
MB	Method Blank	MS	Laboratory Matrix Spike
MSD	Laboratory Matrix Spike Duplicate	REP	Sample replicate
RVS	Reporting Level Verification Standar	SMP	Field Sample
SYS	Sample Yield Spike		

**Prep Batch ID: AK180725-2****Start Date:** 07/25/18**End Date:** 07/25/18**Concentration Method:** NONE**Batch Created By:** aej**Start Time:** 9:30**End Time:** 12:45**Extract Method:** NONE**Date Created:** 07/25/18**Prep Analyst:** Andrew E. Jones**Initial Volume Units:** ml**Time Created:** 13:03**Comments:****Final Volume Units:** ml**Validated By:** hma**Date Validated:** 07/26/18**Time Validated:** 9:24**QC Batch ID:** AK180725-2-4

Lab ID	QC Type	Field ID	Matrix	Date Collected	Initial Wt/Vol	Final Wt/Vol	Cleanup Method	Cleanup DF	Order Number
AK180725-2	MB	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1807323
AK180725-2	LCS	XXXXXX	WATER	XXXXXX	100	100	NONE	1	1807323
1807323-3	DUP	B3J650	WATER	7/16/2018	25	100	NONE	1	1807323
1807323-3	SMP	B3J650	WATER	7/16/2018	25	100	NONE	1	1807323
1807323-6	SMP	B3J654	WATER	7/16/2018	25	100	NONE	1	1807323
1807323-7	SMP	B3J665	WATER	7/16/2018	100	100	NONE	1	1807323
1807323-8	SMP	B3J669	WATER	7/16/2018	100	100	NONE	1	1807323

**QC Types**

CAR	Carrier reference sample	DUP	Laboratory Duplicate
LCS	Laboratory Control Sample	LCSD	Laboratory Control Sample Duplicat
MB	Method Blank	MS	Laboratory Matrix Spike
MSD	Laboratory Matrix Spike Duplicate	REP	Sample replicate
RVS	Reporting Level Verification Standar	SMP	Field Sample
SYS	Sample Yield Spike		



# Metals

## Case Narrative

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### **CH2M HILL Plateau Remediation Company**

#### **100-KR-4 Long Term & Interim Action Monitoring – Water F18-026**

Work Order Number: 1807323

1. The samples were prepared and analyzed based on SW-846, 3<sup>rd</sup> Edition procedures.

For analysis by Trace ICP and ICP-MS, the samples were digested following method 3005A and the current revision of SOP 806.

2. Analysis by ICP-MS followed method 6020A and the current revision of SOP 827.

Analysis by Trace ICP followed method 6010B and the current revision of SOP 834.

3. All standards and solutions are NIST traceable and were used within their recommended shelf life.
4. The samples were prepared and analyzed within the established hold time.

All in house quality control procedures were followed, as described below.

5. General quality control procedures.

- A preparation (method) blank and laboratory control sample were digested and analyzed with the samples in this digestion batch.
- The preparation (method) blank associated with this digestion batch was below the reporting limit for the requested analytes. Sample results have been compared to the blank results and are flagged as appropriate. Chromium and sodium were detected above the MDL.
- All laboratory control sample criteria were met.
- All initial and continuing calibration blanks were below the reporting limit for the requested analytes.



- All initial and continuing calibration verifications were within the acceptance criteria for the requested analytes.
- The interference check samples and high standard read-backs associated with Method 6010B were within acceptance criteria.
- The interference check samples associated with Method 6020A were analyzed.

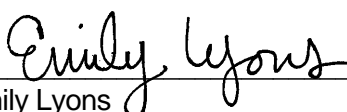
6. Matrix specific quality control procedures.

Sample 1807323-1 was designated as the quality control sample for each analysis.

Similarity of matrix and therefore relevance of the QC results should not be automatically inferred for any sample other than the native sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for accuracy were met.
  - A serial dilution was analyzed with each ICP batch. All acceptance criteria were met.
7. It is a standard practice that samples for ICP-MS are analyzed at a dilution. The 10X factor can be considered an artifact of the prep and does not indicate a secondary dilution and is therefore not flagged as a dilution.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

  
\_\_\_\_\_  
Emily Lyons  
Inorganics Primary Data Reviewer

7/29/18  
Date

  
\_\_\_\_\_  
Inorganics Final Data Reviewer

7/31/18  
Date





### **Inorganic Data Reporting Qualifiers**

The following qualifiers are used as needed by the laboratory when reporting results of inorganic analyses.

- Result qualifier -- A "B" is entered if the reported value was obtained from a reading that was less than the Reporting Limit but greater than or equal to the Method Detection Limit (MDL). If the analyte was analyzed for but not detected a "U" is entered. For samples, negative values are reported as non-detects ("U" flagged). For blanks, if the absolute value of the negative value is above the MDL and below the reporting limit, then the result is "B" flagged.
- QC qualifier -- Specified entries and their meanings are as follows:
  - E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.
  - M - Duplicate injection precision was not met.
  - N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.
  - Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.
  - \* - Duplicate analysis (relative percent difference) not within control limits.
  - S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.
  - C - The analyte was detected in both the sample and the associated QC blank, and the sample concentration was  $\leq 20X$  the blank concentration.
  - D - Analyte was reported at a secondary dilution factor, typically  $DF > 1$  (i.e., the primary preparation required dilution to either bring the analyte within the calibration range or to minimize interference). Required for organics/wetchem if the sample was diluted.

# Dissolved ICP Metals

**Method SW6010B****Sample Results****Lab Name:** ALS -- Fort Collins**Work Order Number:** 1807323**Client Name:** CH2M HILL Plateau Remediation Company**ClientProject ID:** 100-KR-4 Long Term & Interim Action Monitoring - Water F18-02**Field ID:** B3J664**Lab ID:** 1807323-1**Sample Matrix:** WATER**% Moisture:** N/A**Date Collected:** 16-Jul-18**Date Extracted:** 23-Jul-18**Date Analyzed:** 23-Jul-18**Prep Method:** SW3005 Rev A**Prep Batch:** IP180723-1**QCBatchID:** IP180723-1-8**Run ID:** IT180723-1A9**Cleanup:** NONE**Basis:** As Received**File Name:** 180723A.**Analyst:** Steve Workman**Sample Aliquot:** 50 ml**Final Volume:** 50 ml**Result Units:** UG/L**Clean DF:** 1**Analysis ReqCode:** 6010\_METALS\_I

CASNO	Target Analyte	Dilution Factor	Result	Result Qualifier	Reporting Limit	MDL
7440-70-2	CALCIUM	1	210	U	1000	210
7439-95-4	MAGNESIUM	1	89	U	750	89
7440-09-7	POTASSIUM	1	130	U	1000	130
7440-23-5	SODIUM	1	68	BC	1000	38

**Data Package ID:** IT1807323-1**Date Printed:** Sunday, July 29, 2018**ALS -- Fort Collins**

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# Total Recoverable ICP Metals

**Method SW6010B****Sample Results****Lab Name:** ALS -- Fort Collins**Work Order Number:** 1807323**Client Name:** CH2M HILL Plateau Remediation Company**ClientProject ID:** 100-KR-4 Long Term & Interim Action Monitoring - Water F18-02**Field ID:** B3J653**Lab ID:** 1807323-2**Sample Matrix:** WATER**% Moisture:** N/A**Date Collected:** 16-Jul-18**Date Extracted:** 23-Jul-18**Date Analyzed:** 23-Jul-18**Prep Method:** SW3005 Rev A**Prep Batch:** IP180723-1**QCBatchID:** IP180723-1-8**Run ID:** IT180723-1A9**Cleanup:** NONE**Basis:** As Received**File Name:** 180723A.**Analyst:** Steve Workman**Sample Aliquot:** 50 ml**Final Volume:** 50 ml**Result Units:** UG/L**Clean DF:** 1**Analysis ReqCode:** 6010\_METALS\_I

CASNO	Target Analyte	Dilution Factor	Result	Result Qualifier	Reporting Limit	MDL
7440-70-2	CALCIUM	1	41000		1000	210
7439-95-4	MAGNESIUM	1	11000		750	89
7440-09-7	POTASSIUM	1	5700		1000	130
7440-23-5	SODIUM	1	14000		1000	38

**Data Package ID:** IT1807323-1**Date Printed:** Sunday, July 29, 2018**ALS -- Fort Collins**

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# Dissolved ICP Metals

**Method SW6010B****Sample Results****Lab Name:** ALS -- Fort Collins**Work Order Number:** 1807323**Client Name:** CH2M HILL Plateau Remediation Company**ClientProject ID:** 100-KR-4 Long Term & Interim Action Monitoring - Water F18-02**Field ID:** B3J649  
**Lab ID:** 1807323-4**Sample Matrix:** WATER**% Moisture:** N/A**Date Collected:** 16-Jul-18**Date Extracted:** 23-Jul-18**Date Analyzed:** 23-Jul-18**Prep Method:** SW3005 Rev A**Prep Batch:** IP180723-1**QCBatchID:** IP180723-1-8**Run ID:** IT180723-1A9**Cleanup:** NONE**Basis:** As Received**File Name:** 180723A.**Analyst:** Steve Workman**Sample Aliquot:** 50 ml**Final Volume:** 50 ml**Result Units:** UG/L**Clean DF:** 1**Analysis ReqCode:** 6010\_METALS\_I

CASNO	Target Analyte	Dilution Factor	Result	Result Qualifier	Reporting Limit	MDL
7440-70-2	CALCIUM	1	41000		1000	210
7439-95-4	MAGNESIUM	1	11000		750	89
7440-09-7	POTASSIUM	1	5600		1000	130
7440-23-5	SODIUM	1	14000		1000	38

**Data Package ID:** IT1807323-1**Date Printed:** Sunday, July 29, 2018**ALS -- Fort Collins**

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# Total Recoverable ICP Metals

**Method SW6010B****Sample Results****Lab Name:** ALS -- Fort Collins**Work Order Number:** 1807323**Client Name:** CH2M HILL Plateau Remediation Company**ClientProject ID:** 100-KR-4 Long Term & Interim Action Monitoring - Water F18-02**Field ID:** B3J668**Lab ID:** 1807323-5**Sample Matrix:** WATER**% Moisture:** N/A**Date Collected:** 16-Jul-18**Date Extracted:** 23-Jul-18**Date Analyzed:** 23-Jul-18**Prep Method:** SW3005 Rev A**Prep Batch:** IP180723-1**QCBatchID:** IP180723-1-8**Run ID:** IT180723-1A9**Cleanup:** NONE**Basis:** As Received**File Name:** 180723A.**Analyst:** Steve Workman**Sample Aliquot:** 50 ml**Final Volume:** 50 ml**Result Units:** UG/L**Clean DF:** 1**Analysis ReqCode:** 6010\_METALS\_I

CASNO	Target Analyte	Dilution Factor	Result	Result Qualifier	Reporting Limit	MDL
7440-70-2	CALCIUM	1	210	U	1000	210
7439-95-4	MAGNESIUM	1	89	U	750	89
7440-09-7	POTASSIUM	1	130	U	1000	130
7440-23-5	SODIUM	1	66	BC	1000	38

**Data Package ID:** IT1807323-1**Date Printed:** Sunday, July 29, 2018**ALS -- Fort Collins**

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# Dissolved ICPMS Metals

Method SW6020A

## Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1807323

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100-KR-4 Long Term &amp; Interim Action Monitoring - Water F18-02

Field ID: B3J664

Lab ID: 1807323-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 16-Jul-18

Date Extracted: 23-Jul-18

Date Analyzed: 23-Jul-18

Prep Method: SW3005 Rev A

Prep Batch: IP180723-1

QCBatchID: IP180723-1-4

Run ID: IM180723-10A5

Cleanup: NONE

Basis: As Received

File Name: 021SMPL\_

Analyst: Brent A. Stanfield

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Result Qualifier	Reporting Limit	MDL
7440-36-0	ANTIMONY	10	0.12	U	1	0.12
7440-47-3	CHROMIUM	10	3.6	BC	10	0.46
7440-02-0	NICKEL	10	0.92	U	20	0.92
7440-62-2	VANADIUM	10	0.12	U	5	0.12
7440-66-6	ZINC	10	1.4	U	100	1.4

Data Package ID: IM1807323-1

Date Printed: Sunday, July 29, 2018

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# Total Recoverable ICPMS Metals

**Method SW6020A****Sample Results****Lab Name:** ALS -- Fort Collins**Work Order Number:** 1807323**Client Name:** CH2M HILL Plateau Remediation Company**ClientProject ID:** 100-KR-4 Long Term & Interim Action Monitoring - Water F18-02**Field ID:** B3J653**Lab ID:** 1807323-2**Sample Matrix:** WATER**% Moisture:** N/A**Date Collected:** 16-Jul-18**Date Extracted:** 23-Jul-18**Date Analyzed:** 23-Jul-18**Prep Method:** SW3005 Rev A**Prep Batch:** IP180723-1**QCBatchID:** IP180723-1-4**Run ID:** IM180723-10A5**Cleanup:** NONE**Basis:** As Received**File Name:** 025SMPL\_**Analyst:** Brent A. Stanfield**Sample Aliquot:** 50 ml**Final Volume:** 50 ml**Result Units:** UG/L**Clean DF:** 1

CASNO	Target Analyte	Dilution Factor	Result	Result Qualifier	Reporting Limit	MDL
7440-36-0	ANTIMONY	10	0.12	U	1	0.12
7440-47-3	CHROMIUM	10	14	C	10	0.46
7440-02-0	NICKEL	10	1.2	B	20	0.92
7440-62-2	VANADIUM	10	9.1		5	0.12
7440-66-6	ZINC	10	17	B	100	1.4

**Data Package ID:** IM1807323-1**Date Printed:** Sunday, July 29, 2018**ALS -- Fort Collins**

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# Dissolved ICPMS Metals

**Method SW6020A****Sample Results****Lab Name:** ALS -- Fort Collins**Work Order Number:** 1807323**Client Name:** CH2M HILL Plateau Remediation Company**ClientProject ID:** 100-KR-4 Long Term & Interim Action Monitoring - Water F18-02**Field ID:** B3J649**Lab ID:** 1807323-4**Sample Matrix:** WATER**% Moisture:** N/A**Date Collected:** 16-Jul-18**Date Extracted:** 23-Jul-18**Date Analyzed:** 23-Jul-18**Prep Method:** SW3005 Rev A**Prep Batch:** IP180723-1**QCBatchID:** IP180723-1-4**Run ID:** IM180723-10A5**Cleanup:** NONE**Basis:** As Received**File Name:** 026SMPL\_**Analyst:** Brent A. Stanfield**Sample Aliquot:** 50 ml**Final Volume:** 50 ml**Result Units:** UG/L**Clean DF:** 1

CASNO	Target Analyte	Dilution Factor	Result	Result Qualifier	Reporting Limit	MDL
7440-36-0	ANTIMONY	10	0.19	B	1	0.12
7440-47-3	CHROMIUM	10	15	C	10	0.46
7440-02-0	NICKEL	10	0.96	B	20	0.92
7440-62-2	VANADIUM	10	9.5		5	0.12
7440-66-6	ZINC	10	4.1	B	100	1.4

**Data Package ID:** IM1807323-1**Date Printed:** Sunday, July 29, 2018**ALS -- Fort Collins**

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# Total Recoverable ICPMS Metals

**Method SW6020A****Sample Results****Lab Name:** ALS -- Fort Collins**Work Order Number:** 1807323**Client Name:** CH2M HILL Plateau Remediation Company**ClientProject ID:** 100-KR-4 Long Term & Interim Action Monitoring - Water F18-02

<b>Field ID:</b>	B3J668
<b>Lab ID:</b>	1807323-5

**Sample Matrix:** WATER**% Moisture:** N/A**Date Collected:** 16-Jul-18**Date Extracted:** 23-Jul-18**Date Analyzed:** 23-Jul-18**Prep Method:** SW3005 Rev A**Prep Batch:** IP180723-1**QCBatchID:** IP180723-1-4**Run ID:** IM180723-10A5**Cleanup:** NONE**Basis:** As Received**File Name:** 029SMPL\_**Analyst:** Brent A. Stanfield**Sample Aliquot:** 50 ml**Final Volume:** 50 ml**Result Units:** UG/L**Clean DF:** 1

CASNO	Target Analyte	Dilution Factor	Result	Result Qualifier	Reporting Limit	MDL
7440-36-0	ANTIMONY	10	0.12	U	1	0.12
7440-47-3	CHROMIUM	10	2.7	BC	10	0.46
7440-02-0	NICKEL	10	0.92	U	20	0.92
7440-62-2	VANADIUM	10	0.12	U	5	0.12
7440-66-6	ZINC	10	1.4	U	100	1.4

**Data Package ID:** IM1807323-1**Date Printed:** Sunday, July 29, 2018**ALS -- Fort Collins**

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## ICP Metals

Method SW6010B

Method Blank

Lab Name: ALS -- Fort Collins

Work Order Number: 1807323

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100-KR-4 Long Term &amp; Interim Action Monitoring - Water F18-02

Lab ID: IP180723-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 23-Jul-18

Date Analyzed: 23-Jul-18

Prep Batch: IP180723-1

QCBatchID: IP180723-1-8

Run ID: IT180723-1A9

Cleanup: NONE

Basis: N/A

File Name: 180723A.

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	Result Qualifier	Reporting Limit	MDL
7440-70-2	CALCIUM	1	210	U	1000	210
7439-95-4	MAGNESIUM	1	89	U	750	89
7440-09-7	POTASSIUM	1	130	U	1000	130
7440-23-5	SODIUM	1	59	B	1000	38

Data Package ID: IT1807323-1

Date Printed: Sunday, July 29, 2018

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# ICP Metals

## Method SW6010B

### Laboratory Control Sample

**Lab Name:** ALS -- Fort Collins**Work Order Number:** 1807323**Client Name:** CH2M HILL Plateau Remediation Company**ClientProject ID:** 100-KR-4 Long Term & Interim Action Monitoring - Water F18-02**Lab ID:** IP180723-1LCS**Sample Matrix:** WATER**% Moisture:** N/A**Date Collected:** N/A**Date Extracted:** 07/23/2018**Date Analyzed:** 07/23/2018**Prep Method:** SW3005A**Prep Batch:** IP180723-1**QCBatchID:** IP180723-1-8**Run ID:** IT180723-1A9**Cleanup:** NONE**Basis:** N/A**File Name:** 180723A.**Sample Aliquot:** 50 ml**Final Volume:** 50 ml**Result Units:** UG/L**Clean DF:** 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
7440-70-2	CALCIUM	40000	40100	1000		100	80 - 120%
7439-95-4	MAGNESIUM	40000	41200	750		103	80 - 120%
7440-09-7	POTASSIUM	40000	42600	1000		106	80 - 120%
7440-23-5	SODIUM	40000	39300	1000		98	80 - 120%

**Data Package ID:** IT1807323-1**Date Printed:** Sunday, July 29, 2018**ALS -- Fort Collins**

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# ICP Metals

## Method SW6010B

### Matrix Spike And Matrix Spike Duplicate

**Lab Name:** ALS -- Fort Collins**Work Order Number:** 1807323**Client Name:** CH2M HILL Plateau Remediation Company**ClientProject ID:** 100-KR-4 Long Term & Interim Action Monitoring - Water F1**Field ID:** B3J664**LabID:** 1807323-1MS**Sample Matrix:** WATER**% Moisture:** N/A**Date Collected:** 16-Jul-18**Date Extracted:** 23-Jul-18**Date Analyzed:** 23-Jul-18**Prep Method:** SW3005 Rev A**Prep Batch:** IP180723-1**QCBatchID:** IP180723-1-8**Run ID:** IT180723-1A9**Cleanup:** NONE**Basis:** As Received**Sample Aliquot:** 50 ml**Final Volume:** 50 ml**Result Units:** UG/L**File Name:** 180723A.

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7440-70-2	CALCIUM	210	U	38700		1000	40000	97	80 - 120%
7439-95-4	MAGNESIUM	89	U	39700		750	40000	99	80 - 120%
7440-09-7	POTASSIUM	130	U	40700		1000	40000	102	80 - 120%
7440-23-5	SODIUM	68	BC	37700		1000	40000	94	80 - 120%

**Field ID:** B3J664**LabID:** 1807323-1MSD**Sample Matrix:** WATER**% Moisture:** N/A**Date Collected:** 16-Jul-18**Date Extracted:** 23-Jul-18**Date Analyzed:** 23-Jul-18**Prep Method:** SW3005 Rev A**Prep Batch:** IP180723-1**QCBatchID:** IP180723-1-8**Run ID:** IT180723-1A9**Cleanup:** NONE**Basis:** As Received**Sample Aliquot:** 50 ml**Final Volume:** 50 ml**Result Units:** UG/L**File Name:** 180723A.

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
7440-70-2	CALCIUM	39200		40000	98	1000	20	1
7439-95-4	MAGNESIUM	40200		40000	100	750	20	1
7440-09-7	POTASSIUM	40900		40000	102	1000	20	0
7440-23-5	SODIUM	37900		40000	94	1000	20	0

**Data Package ID:** IT1807323-1

# Prep Batch ID: IP180723-1

Start Date: 07/23/18

End Date: 07/23/18

Concentration Method: NONE

Batch Created By: jml

Start Time: 8:26

End Time: 18:00

Extract Method: SW3005A

Date Created: 07/23/18

Prep Analyst: Jill M. Latelle

Initial Volume Units: ml

Time Created: 8:45

Comments:

Final Volume Units: ml

Validated By: jml

Date Validated: 07/23/18

Time Validated: 9:50

QC Batch ID: IP180723-1-8

Lab ID	QC Type	Field ID	Matrix	Date Collected	Initial Wt/Vol	Final Wt/Vol	Cleanup Method	Cleanup DF	Order Number
IP180723-1	MB	XXXXXX	WATER	XXXXXX	50	50	NONE	1	1807323
IP180723-1	LCS	XXXXXX	WATER	XXXXXX	50	50	NONE	1	1807323
1807323-1	MS	B3J664	WATER	7/16/2018	50	50	NONE	1	1807323
1807323-1	MSD	B3J664	WATER	7/16/2018	50	50	NONE	1	1807323
1807323-1	SMP	B3J664	WATER	7/16/2018	50	50	NONE	1	1807323
1807323-2	SMP	B3J653	WATER	7/16/2018	50	50	NONE	1	1807323
1807323-4	SMP	B3J649	WATER	7/16/2018	50	50	NONE	1	1807323
1807323-5	SMP	B3J668	WATER	7/16/2018	50	50	NONE	1	1807323

QC Types

CAR	Carrier reference sample	DUP	Laboratory Duplicate
LCS	Laboratory Control Sample	LCSD	Laboratory Control Sample Duplicat
MB	Method Blank	MS	Laboratory Matrix Spike
MSD	Laboratory Matrix Spike Duplicate	REP	Sample replicate
RVS	Reporting Level Verification Standar	SMP	Field Sample
SYS	Sample Yield Spike		

## ICPMS Metals

Method SW6020A

Method Blank

Lab Name: ALS -- Fort Collins

Work Order Number: 1807323

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100-KR-4 Long Term &amp; Interim Action Monitoring - Water F18-02

Lab ID: IP180723-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 23-Jul-18

Date Analyzed: 23-Jul-18

Prep Batch: IP180723-1

QCBatchID: IP180723-1-4

Run ID: IM180723-10A5

Cleanup: NONE

Basis: N/A

File Name: 005SMPL\_

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	Result Qualifier	Reporting Limit	MDL
7440-36-0	ANTIMONY	10	0.12	U	1	0.12
7440-47-3	CHROMIUM	10	3.2	B	10	0.46
7440-02-0	NICKEL	10	0.92	U	20	0.92
7440-62-2	VANADIUM	10	0.12	U	5	0.12
7440-66-6	ZINC	10	1.4	U	100	1.4

Data Package ID: IM1807323-1

# ICPMS Metals

## Method SW6020A

### Laboratory Control Sample

**Lab Name:** ALS -- Fort Collins**Work Order Number:** 1807323**Client Name:** CH2M HILL Plateau Remediation Company**ClientProject ID:** 100-KR-4 Long Term & Interim Action Monitoring - Water F18-02**Lab ID:** IM180723-1LCS**Sample Matrix:** WATER**% Moisture:** N/A**Date Collected:** N/A**Date Extracted:** 07/23/2018**Date Analyzed:** 07/23/2018**Prep Method:** SW3005A**Prep Batch:** IP180723-1**QCBatchID:** IP180723-1-4**Run ID:** IM180723-10A5**Cleanup:** NONE**Basis:** N/A**File Name:** 006SMPL\_**Sample Aliquot:** 50 ml**Final Volume:** 50 ml**Result Units:** UG/L**Clean DF:** 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
7440-36-0	ANTIMONY	30	30.1	1		100	80 - 120%
7440-47-3	CHROMIUM	500	477	10		95	80 - 120%
7440-02-0	NICKEL	500	489	20		98	80 - 120%
7440-62-2	VANADIUM	100	93.6	5		94	80 - 120%
7440-66-6	ZINC	2000	1970	100		98	80 - 120%

**Data Package ID:** IM1807323-1

## ICPMS Metals

Method SW6020A

## Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS -- Fort Collins

Work Order Number: 1807323

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100-KR-4 Long Term &amp; Interim Action Monitoring - Water F1

Field ID: B3J664

LabID: 1807323-1MS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 16-Jul-18

Date Extracted: 23-Jul-18

Date Analyzed: 23-Jul-18

Prep Method: SW3005 Rev A

Prep Batch: IP180723-1

QCBatchID: IP180723-1-4

Run ID: IM180723-10A5

Cleanup: NONE

Basis: As Received

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

File Name: 023SMPL\_

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7440-36-0	ANTIMONY	0.12	U	29		1	30	97	75 - 125%
7440-47-3	CHROMIUM	3.6	BC	483		10	500	96	75 - 125%
7440-02-0	NICKEL	0.92	U	500		20	500	100	75 - 125%
7440-62-2	VANADIUM	0.12	U	94.6		5	100	95	75 - 125%
7440-66-6	ZINC	1.4	U	1920		100	2000	96	75 - 125%

Field ID: B3J664

LabID: 1807323-1MSD

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 16-Jul-18

Date Extracted: 23-Jul-18

Date Analyzed: 23-Jul-18

Prep Method: SW3005 Rev A

Prep Batch: IP180723-1

QCBatchID: IP180723-1-4

Run ID: IM180723-10A5

Cleanup: NONE

Basis: As Received

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

File Name: 024SMPL\_

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
7440-36-0	ANTIMONY	29.4		30	98	1	20	2
7440-47-3	CHROMIUM	490		500	97	10	20	2
7440-02-0	NICKEL	509		500	102	20	20	2
7440-62-2	VANADIUM	95.8		100	96	5	20	1
7440-66-6	ZINC	1960		2000	98	100	20	2

Data Package ID: IM1807323-1

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**Prep Batch ID: IP180723-1**

Start Date: 07/23/18

End Date: 07/23/18

Concentration Method: NONE

Batch Created By: jml

Start Time: 8:26

End Time: 18:00

Extract Method: SW3005A

Date Created: 07/23/18

Prep Analyst: Jill M. Latelle

Initial Volume Units: ml

Time Created: 8:45

Comments:

Final Volume Units: ml

Validated By: jml

Date Validated: 07/23/18

Time Validated: 9:50

QC Batch ID: IP180723-1-4

Lab ID	QC Type	Field ID	Matrix	Date Collected	Initial Wt/Vol	Final Wt/Vol	Cleanup Method	Cleanup DF	Order Number
IP180723-1	MB	XXXXXX	WATER	XXXXXX	50	50	NONE	1	1807323
IM180723-1	LCS	XXXXXX	WATER	XXXXXX	50	50	NONE	1	1807323
1807323-1	MS	B3J664	WATER	7/16/2018	50	50	NONE	1	1807323
1807323-1	MSD	B3J664	WATER	7/16/2018	50	50	NONE	1	1807323
1807323-1	SMP	B3J664	WATER	7/16/2018	50	50	NONE	1	1807323
1807323-2	SMP	B3J653	WATER	7/16/2018	50	50	NONE	1	1807323
1807323-4	SMP	B3J649	WATER	7/16/2018	50	50	NONE	1	1807323
1807323-5	SMP	B3J668	WATER	7/16/2018	50	50	NONE	1	1807323

QC Types

CAR	Carrier reference sample	DUP	Laboratory Duplicate
LCS	Laboratory Control Sample	LCSD	Laboratory Control Sample Duplicat
MB	Method Blank	MS	Laboratory Matrix Spike
MSD	Laboratory Matrix Spike Duplicate	REP	Sample replicate
RVS	Reporting Level Verification Standar	SMP	Field Sample
SYS	Sample Yield Spike		